Patent Claims

1. A method for acquiring and processing signals from industrial processes which are composed of at least one partial process (T1...T2), the industrial process being controlled and/or regulated by at least one automation device which is equipped with one or more bus systems, characterized in that

a) at least one measuring bus system (B1...B2) is used which is not identical to the bus system or the bus systems of the automation device,

b) measuring signals are acquired using at least one measuring head (M1...M6), the measuring head (M1...M6) acquiring measuring signals at the input end from signal generators (S1...S6) of the industrial process which are present and/or which are to be additionally provided and passing on these measuring signals at the output end to the measuring bus system (B1...B2) in a predefined form,

c) the measuring signals are further processed by at least one data concentrator (D1...D2), and in that

d) measuring heads (M1...M7) and/or data concentrators (D1...D2) are automatically detected.

2. The method as claimed in claim 1, characterized in that at least one measuring head (M7) receives, at the input end, measuring signals from any desired bus system (P2).

3. The method as claimed in one of the preceding claims, characterized in that at least one measuring head passes on measuring signals directly to a data concentrator (D1...D2) at the output end.

4. The method as claimed in one of the preceding claims, characterized in that the setup

of the communication between data concentrators (D1...D2) and measuring heads (M1...M7) is carried out automatically using at least one communications unit.

5. The method as claimed in one of the preceding claims, characterized in that all the time signals are generated by providing measuring signals with a time stamp.

6. The method as claimed in one of the preceding claims, characterized in that at least one measuring head (M1...M7) receives a standardized time signal.

7. The method as claimed in claim 6, characterized in that the standardized time signal is acquired from a Global Positioning System (GPS).

8. The method as claimed in one of the preceding claims, characterized in that the time signals and/or measuring signals which originate from at least one data concentrator (D1...D2) are processed using at least one programmable evaluation unit (E1...E2), it being possible for the programmable evaluation unit (E1...E2) to be located at any desired spatial distance from the partial processes (T1...T2).

9. The method as claimed in one of the preceding claims, characterized in that at least one display unit (A1...A2) is used to display data which is generated from the measuring signals and/or time signals, it being possible for the display unit (A1...A2) to be located at any desired spatial distance from the partial processes (T1...T2).

10. A device for acquiring and processing signals from industrial processes which are composed of at least one partial process (T1…T2), the industrial process being controlled and/or regulated by at least one automation device which is equipped with one or more bus systems, characterized in that

a) at least one measuring bus system (B1…B2) is provided which is not identical to the bus system or the bus systems of the automation device,

b) at least one measuring head (M1…M6) for acquiring measuring signals is provided and is connected at the input end to signal generators (S1…S6) of the industrial process which are present and/or which are to be additionally provided, and at the output end passes on signals in a predefined form to the measuring bus system (B1…B2),

c) one or more data concentrators (D1…D2) are connected to the measuring bus system (B1…B2), and in that

d) means are provided for automatically detecting measuring heads (M1…M7) and/or data concentrators (D1…D2).

11. The device as claimed in claim 10, characterized in that at least one measuring head (M7), which is connected at the input end to any desired bus system (P2), is provided.

12. The device as claimed in claim 10 or 11, characterized in that at least one measuring head, which is directly connected at the output end to a data concentrator (D1…D2), is provided.

13. The device as claimed in one of claims 10 to 12, characterized in that a communications unit, which permits the automatic setup of the communication

between data concentrators (D1…D2) and measuring heads (M1…M7), is provided.

14. The device as claimed in one of claims 10 to 13, characterized in that at least one measuring head (M1…M7), which is connected to a signal generator which supplies a standardized time signal, is provided.

15. The device as claimed in claim 14, characterized in that at least one of the measuring heads described in the characterizing part of claim 16 is mounted on the upper termination of a device within which, or by means of which, the industrial process is carried out.

16. The device as claimed in one of claims 10 to 15, characterized in that at least one programmable evaluation unit (E1…E2) is provided, it being possible for the programmable evaluation unit (E1…E2) to be located at any desired spatial distance from the partial processes (T1…T2).

17. The device as claimed in one of claims 10 to 16, characterized in that at least one display unit (A1…A2) is provided for displaying data which is generated from the measuring signals and/or time signals, it being possible for the display unit (A1…A2) to be located at any desired spatial distance from the partial processes (T1…T2).

18. The device as claimed in one of claims 10 to 17, characterized in that the data concentrators (D1…D2) are conditioned so as to be capable of being expanded in such a way that the respectively required number of measuring bus systems (B1…B2) and/or measuring heads (M1…M7) can be connected to them.